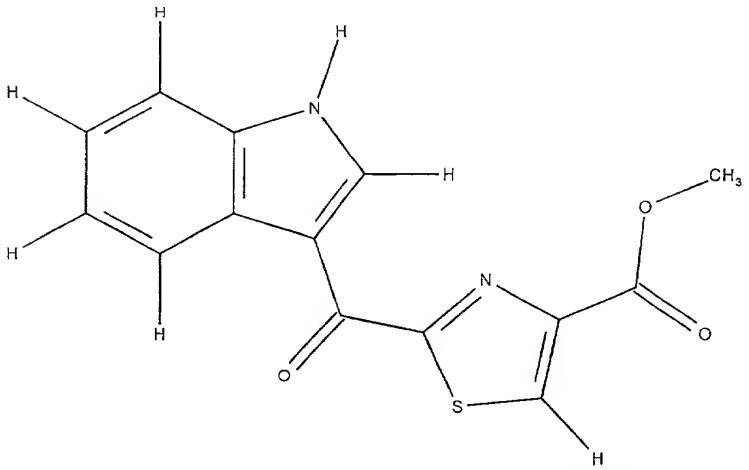
CLAIMS

We claim:

1. A preparation of the endogenous Ah receptor ligand.

2. The preparation of claim 1 wherein the ligand has the following formula:

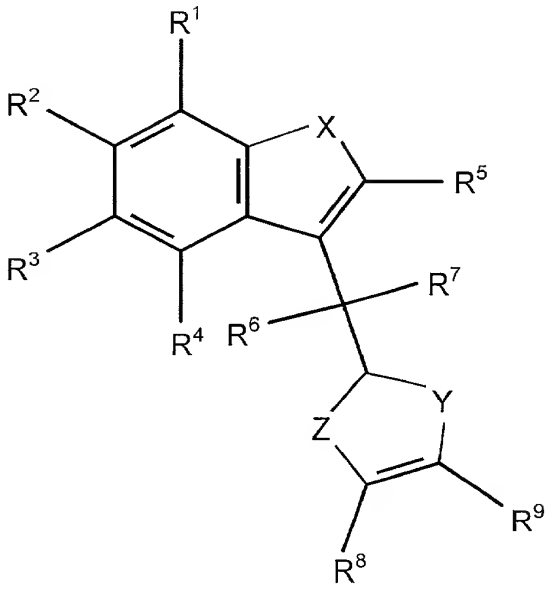


3. The preparation of claim 1 wherein the preparation is at least 90% pure.

4. The preparation of claim 3 wherein the preparation is at least 95% pure.

5. The preparation of claim 1 wherein the ligand is isolated from animal tissues.

6. A preparation of Ah receptor ligand analog, wherein the analog is of the formula:



Wherein

R^1, R^2, R^3, R^4, R^5, and R^8 are selected from the group consisting of H, lower alkyl (1-5 carbons), Br, F, Cl, O-acyl (1-5 C) and OR^{10} where R^{10}=H, lower alkyl (1-5 C);

R^6 and R^7 taken together may be O; or

when R^6=H, then R^7 can be H, OH, Br, F, Cl, OR^{11} where R^{11}=alkyl (1-5 C); or

when R^7=H, then R^6 can be H, OH, Br, F, Cl, OR^{11} where R^{11}=alkyl (1-5 C);

R^9 can be $O-\overset{O}{\overset{\|}{C}}-R^{12}$, wherein R^{12} is selected from the group consisting of alkyl (1-5 C), aryl, fluoromethyl, difluoromethyl, and trifluoromethyl; or

R^9 can be $-\overset{O}{\overset{\|}{C}}-O-R^{13}$, where R^{13} is selected from the group consisting of alkyl (1-5 C), aryl, fluoromethyl, difluoromethyl, and trifluoromethyl; or

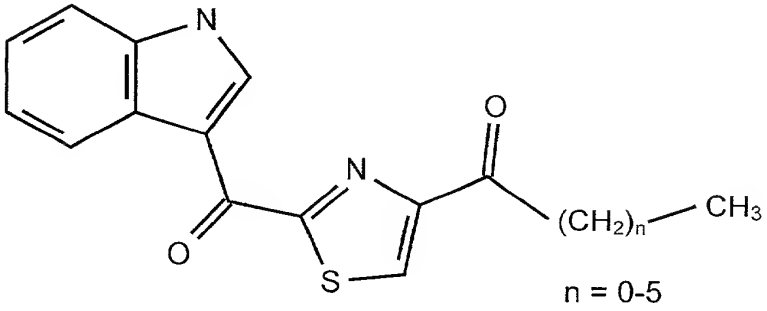
R^9 can be $-\overset{\overset{O}{\|}}{C}-R^{14}$, where R^{14}=is selected from the group consisting of alkyl (1-5 C), fluoromethyl, difluoromethyl, and trifluoromethyl; or

R^9 can be $-\overset{\overset{OH}{|}}{C}-R^{15}$, where R^{15} is selected from the group consisting of alkyl (1-5 C), fluoro methyl, difluoro methyl, and trifluoro methyl, and

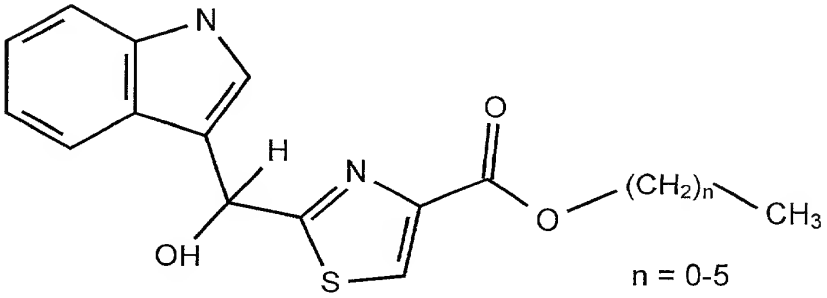
X, Y, Z are selected from the group consisting of C, N, O, and S.

7. A preparation of Ah receptor ligand analog, wherein the analog is selected from the group consisting of I, II and III, wherein:

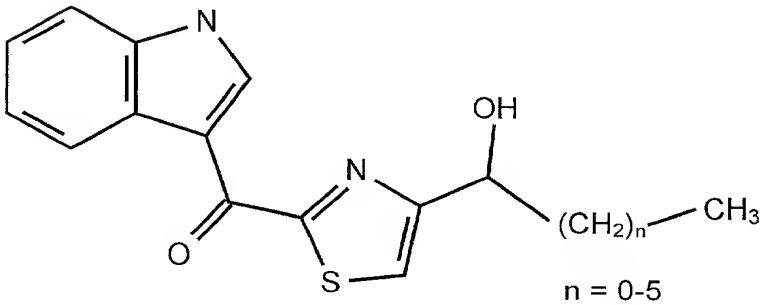
I.



II.



III.



8. A method of preparing endogenous Ah receptor ligand comprising the steps of:

a) obtaining and homogenizing an animal organ, wherein the organ contains the Ah receptor ligand, wherein a homogenate is formed,

b) extracting the homogenate of step (a) with a solvent, wherein an extract is formed,

c) heating the extract, and

d) purifying the ligand through a chloroform gradient.

9. The method of claim 8 wherein the animal organ is selected for the group consisting of lung, liver, brain, bone, and muscle.

10. The method of claim 8 wherein the extraction is with methanol.

11. The method of claim 8 wherein the extract is flushed with nitrogen gas, stirred and centrifuged.

12. The method of claim 8 wherein the extract is heated at between 90°C-110°C with H_2SO_4.

13. The method of claim 8 wherein the extract is purified through silica batch purification.

14. The method of claim 8 wherein the ligand is further purified on HPLC columns.

15. The method of claim 8 further comprising the step of determining ligand activity.